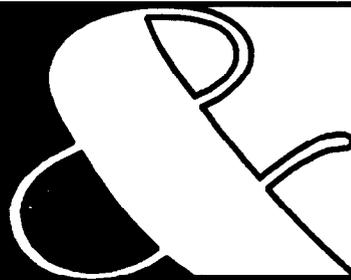


hazardous substances



Public Health

A publication of the Agency for Toxic Substances and Disease Registry

Volume 1, Number 2

March 1991

National Exposure Registry Tracks Health of Exposed Persons

The concerns of citizens who have been exposed to hazardous substances in their community are being addressed through a nationwide effort to track the health of such persons. The National Exposure Registry was created by ATSDR to aid in assessing long-term health consequences of exposure to Superfund-related hazardous chemicals. Participation in the program is strictly voluntary and contributes to the body of knowledge about the human health effects of toxic substances.

The Registry is composed of multiple subregistries that focus on specific chemicals. Each subregistry lists individuals exposed to a hazardous substance or mixture of substances from a specific site under defined conditions. Current subregistries include persons exposed to trichloroethylene (TCE) and dioxin. A third subregistry focusing on benzene is being established because of the large number of sites with relatively high levels of benzene-contaminated drinking water and the health effects noted in populations exposed to benzene. Investigators estimate that the benzene subregistry will contain approximately 7,000 registrants.

Some residents of communities in the states of Indiana, Michigan, and Illinois were exposed to TCE, the first chemical chosen for a subregistry. This subregistry contains nearly 5,000 individuals. TCE was identified at 468 of 1,177 National Priorities List (NPL) sites. Data has been collected on persons at three NPL sites in Michigan, two NPL sites in Indiana, two non-NPL sites in Indiana, five NPL sites in Illinois, and one non-NPL site in Illinois. Registrants on this subregistry have lived for more than 30 days in homes served by private wells that were contaminated over a specified time frame.

The dioxin subregistry has approximately 250 individuals enrolled. Registrants of this subregistry have lived near one of the four NPL sites in the Times Beach, Missouri, area and previously have participated in one of the health studies conducted there.

Researchers will use the information gathered through the National Exposure Registry in epidemiologic or health studies and for state and federal health surveillance programs. Participants will be kept informed of important research and findings related to their exposure. To address confidentiality concerns, ATSDR has adopted the policy that no data containing personal identifiers will be released without the written permission of the registrant. As an agency of the federal government, ATSDR must respond to Freedom of Information requests, but only for aggregate data with personal identifiers removed.

Three criteria must be met before a potential registrant can be classified as "exposed": 1) valid analytical data must document a contaminated medium (i.e., contaminated groundwater); 2) a plausible route of transmission exists from the medium to the individual (i.e., the water used for drinking); and 3) evidence exists that transmission occurred from the contaminated medium to the individual (i.e., the registrant drank the water). Meeting the first two criteria classifies the individual as "potentially exposed"; persons meeting all three criteria are "exposed."

According to Dr. Je Anne R. Burg, Chief of the Exposure and Disease Registry Branch at ATSDR, communities appear to accept the registry approach not only as a viable way to assess the presence of excess adverse health outcomes within their community, but also as a general tool to be applied across the nation. Community response to the Registry has been overwhelmingly positive. At 13 of the sites where eligible persons have been asked to participate, response rates have exceeded 99%; at 4 other sites, the response rate exceeds 96%.

"The information collected for the National Exposure Registry will help answer the question whether adverse health outcomes are associated with waste sites and dump sites. The cost of a Registry program and the long-range commitment needed must be considered, however, in making long-term Registry plans," says Dr. Burg.

For more information, please contact Dr. Je Anne R. Burg, Chief, Exposure and Disease Registry Branch, Division of Health Studies, ATSDR, 1600 Clifton Rd., N.E., Mailstop E-31, Atlanta, GA 30333, (404) 639-0561.



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Public Health Service

Agency for Toxic Substances and Disease Registry



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Flow Cytometry: A New Tool for Environmental Medicine

Researchers in environmental medicine are trying to determine if a relatively new technique called cell phenotyping can be effectively used to identify specific effects of hazardous substances on the immune system. Using a laboratory procedure called flow cytometry, scientists who study human immunodeficiency virus (HIV) and other diseases have used cell phenotyping to identify cellular components of the immune response. Now this application is being used to evaluate patients who may have been exposed to environmental toxins.

In a project headed jointly by researchers from the Centers for Disease Control (CDC) and ATSDR (see box), this new technology will be used to find biomarkers of hazardous exposure in the immune systems of persons living near hazardous waste sites. Biomarkers indicate a change in an organism that may document exposure or reflect the effects of a toxicant.

Scientists Work To Standardize Exposure Detection Technique

Cell phenotyping using flow cytometry is a relatively new field with a variety of instrumentation and procedures. This has made comparisons between laboratories difficult; interlaboratory comparisons have high coefficients of variation. To improve interlaboratory comparability, methods using microbead standards and calibration software have been developed by the laboratories in the Center for Environmental Health and Injury Control (CEHIC) at the Centers for Disease Control.

The research, known as the Immune Biomarkers Demonstration Project, is being conducted in four laboratories associated with the Association of Occupational and Environmental Clinics (AOEC). They are: Johns Hopkins University Medical Center, Baltimore, MD; National Jewish Center for Immunology and Respiratory Medicine, Denver, CO; George Washington University Medical Center, Washington, DC; Robert Wood Johnson Medical School and Rutgers University in Piscataway, NJ.

The method developed by CEHIC provides for standardized calibration of flow cytometers, thereby improving interlaboratory data comparison. After the method is evaluated, the laboratories will begin studying populations to identify the effect of hazardous substances on the immune system. Action on the project in 1991 will involve training staff at participating clinical and laboratory sites, standardization trials, and evaluation of the project for peer review.

Like viruses, certain chemicals are known to affect the immune system. Because the effects of most toxicants on the immune system are subtle, the researchers have chosen to use a screening battery of several tests of immune function. After a complete blood count, differential count, and immunoglobulin G are done, the clinical technique of flow cytometry is used to evaluate lymphocytes, the white blood cells that modulate immune function.

Biomarkers Indicate a Change In an Organism that may Document Exposure or Reflect the Effects of a Toxicant.

An important part of the effort has been to standardize the reagents and laboratory techniques so that the results will be meaningful from one study to the next. Because this is a relatively new test, a normative database is being developed to allow investigators to define which results are truly abnormal.

Over the past 5 years, flow cytometry been used to evaluate immune system disorders caused by HIV infection. Using monoclonal antibodies and fluorescence tags, researchers are able to categorize the body's lymphocytes

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by analyzing the type of sites that are activated on their surface. For example, in the case of HIV, the ratio of T4 to T8 sites is altered.

Flow cytometry at CDC is under the supervision of Robert Vogt, Ph.D., who is completing a system that will provide standardized reference values to labs anywhere in the country. This system will enable well-standardized studies to be conducted in any area of the country, allowing data from multisite studies to be combined. When the demonstration project is completed, the procedure will become available to occupational clinics across the United States, with the analysis of flow cytometric data by CDC's Division of Environmental Health Laboratory Sciences Lab.

For technical information about the Immune Biomarkers Demonstration Project, please contact Dr. Vogt at (404) 488-4135; for general information, contact Dr. Michael Straight at (404) 639-0563.

From the States...

ARKANSAS

The Arkansas Department of Health offers physicians a full-day training course entitled "Environmental Health Issues: Exposure



to Hazardous Substances in Arkansas." The Department of Health conducts the training at strategically located Area Health Education Center (AHEC) offices in order to reach as many of the 4,000 physicians in the state as possible. In addition, the Department of Health solicits assistance from AHECs in obtaining a meeting room and in promoting and advertising the conference. The speakers are from the University of Arkansas Medical Center and from the Arkansas Department of Health.

According to planning specialist Marguerite Edelmann, the subject matter for the courses is based on public inquiries to the Department of Health. Sessions conducted include the following: "The Community's Right to Know," "Medical Evaluation of the Chemically Exposed Person," "Environmental Exposure Detection Approaches in Clinical Practice," "Radon in Arkansas," "Medical Problems from Exposure to Asbestos," "Evaluation of Reproductive Risks from Exposure to Chemicals," and "Health Effects of Pesticides."

The success of "Environmental Health Issues" has hinged on the strong promotional campaign conducted by the Department of Health. First, an initial announcement containing a registration form is mailed out 3 months prior to the meeting. Then, 6-8 weeks before the training course,

each physician receives a personal letter from the Department of Health to encourage his or her participation. Finally, 2 weeks before the meeting, attendees are sent a reminder card.

Ms. Edelmann also attributes the success of the program to the quality of the speakers. "If the speaker is someone the physicians have respect for and look forward to meeting," the seminar can have a high turnout, she says.

"Environmental Health Issues," conducted through a cooperative agreement with ATSDR, presents information to help physicians 1) deal with diagnosis and treatment of illness in persons exposed to hazardous materials; 2) communicate with citizens concerned about the risks and effects of hazardous materials; and 3) obtain more information about specific chemicals or facilities using or producing hazardous chemicals.

For more information, please contact Marguerite Edelmann, Planning Specialist, Epidemiology Division, Arkansas Department of Health, 4815 W. Markham St., Little Rock, AR 72205, (501) 661-2264.

ILLINOIS

The Illinois Department of Public Health (IDPH) is developing resource materials that discuss issues and health concerns related to exposure to hazardous substances for the primary care physician and other health care professionals.



Printed materials available include the following:

- 1) Chemical-specific Medical Bulletins. Each bulletin will discuss potential sources of exposure, clinical toxicology, and diagnosis and treatment of adverse health effects resulting from specific substances encountered in the home, workplace, or environment. Initial offerings will include various heavy metals, pesticides, and solvents.
- 2) Concept-specific Medical Bulletins. These bulletins discuss broader issues such as the basis of concern, theory, and rationale of regulatory or medical intervention, and criteria for initiating further study. They will cover such subjects as air pollution and health, reproductive hazards, disease clustering, pesticides in food, and chemical hypersensitivity.
- 3) Site-specific Medical Bulletins. Concern over hazardous waste sites, industrial operations, or exposures found in a particular community has prompted the development of bulletins that discuss the background, chemicals, exposure pathways, and possible medical complications or health risks associated with such sites.

IDPH, through its cooperative agreement with ATSDR, is developing other tools for the health care professional confronted with health questions related to environmental exposures. For example, a collection of audiovisual materials is being accumulated for use at meetings, hospitals, and clinics.

In addition, IDPH conducts environmental health workshops and seminars for health care professionals in the state. "Illinois public health officials and physicians have a need for risk communication," according to IDPH environmental toxicologist Sharron LaFollette. This need, evidenced by the problems public health officials had addressing public concerns in meetings and by telephone, prompted the development of risk communication seminars.

To target physicians and other health care professionals who serve citizens living near hazardous waste sites, IDPH offers site-related workshops and grand rounds. These information exchange sessions address clinical and public health issues related to specific sites, such as the following: community health concerns and educational outreach; follow-up exposure studies, health studies and disease registries involvement; and chemical-specific clinical and public health information.

For more information, please contact Sharron LaFollette, Ph.D., Environmental Toxicologist, Division of Environmental Health, Illinois Department of Public Health, 525 W. Jefferson St., Springfield, IL 62761, (217) 782-5830.

IOWA

The Institute of Agricultural Medicine and Occupational Health at the University of Iowa offers a seminar entitled "Agricultural Chemicals: Acute and Chronic Exposures" to provide physicians with accurate and up-to-date information concerning treatment of persons exposed to agricultural chemicals. The Institute has provided 14 presentations to physicians throughout Iowa. Audiences have ranged in size from as large as 98 to as small as 10.

The seminar developed from the concerns of Iowa primary care physicians about the exposure of farmers and their families to agricultural chemicals. According to educational services coordinator Linda Leverenz, the Institute has developed fact sheets to be distributed by doctors' offices that address safe use and handling of agricultural chemicals.

To promote the "Agricultural Chemicals" training course, the Institute contacts Iowa hospitals by mail and offers to schedule a 2-hour seminar free of charge. Drs. Burton Kross and Laurence Fuortes, from the Department of Preventive Medicine and Environmental Health at the



University of Iowa, teach the course. These faculty members "are grass-roots oriented and have a commitment to the issue of pesticide exposure," says Ms. Leverenz. She encourages state health officials who are planning to start similar programs to utilize medical school faculty as a resource because of their knowledge of human health effects and commitment to community service.

Once physicians have completed the "Agricultural Chemicals" course, sponsored by the Institute through a cooperative agreement with ATSDR, they should be able to accomplish the following: 1) describe acute and chronic health effects of agricultural chemical exposures; 2) define appropriate diagnostic and treatment methods for agricultural chemical exposures; and 3) recommend actions for reducing or eliminating chemical exposures in rural areas.

For more information, please contact Linda L. Leverenz, M.S., C.H.E.S., Program Manager, Institute of Agricultural Medicine and Occupational Health, The University of Iowa, Iowa City, IA 52242, (319) 335-4202.

State Environmental Health Information Clearinghouse Planned

State environmental health officials may eventually be able to benefit from the experience of their peers in other states through a state environmental health information clearinghouse. The national clearinghouse is expected to enhance the informal exchange of information that already exists between states, and between state and federal agencies.

By providing a centralized system to allow state agencies access to research and policy documents from other states, the national clearinghouse would make it easier for environmental health workers to compare assessment protocols and policies, evaluate approaches to environmental health problems, and, in some cases, develop a national consensus on issues. Because state agencies share similar regulatory responsibilities, policymakers in different states can profitably draw on the experience of others.

Because state agencies share similar regulatory responsibilities, policymakers in different states can profitably draw on the experience of others.

Health officials from eight states have formed an advisory board for the pilot project, sponsored by the National Governors' Association (NGA) through a cooperative agreement with ATSDR. Representatives from California, Connecticut, Florida, Massachusetts, Minnesota, New York, Ohio, and Wisconsin attended a workshop July 25-26, 1990, in Woods Hole, Massachusetts, to discuss

guidelines for operating the clearinghouse. Documents appropriate for inclusion in the state environmental health information clearinghouse were defined as anything that could help a state address an environmental health problem. This might include informal memos, study protocols, summaries of health investigations, or educational materials such as videotapes.

In addition to the eight states on the advisory board, Iowa, Missouri, New Hampshire, New Jersey, North Carolina, North Dakota, Rhode Island, Texas, Virginia, and Washington are taking part in the pilot clearinghouse. Follow-up activities will include evaluation interviews with clearinghouse participants to determine how they used the information and to hear their suggestions for program improvement.

NGA's cooperative agreement with ATSDR also involves sponsoring workshops and preparing publications on several environmental health issues, such as the management of medical waste, the coordination of health and environmental databases, and the role of health agencies in chemical emergencies. For more information on the clearinghouse, state officials may contact Barbara Wells, Policy Analyst, National Governors' Association, 444 N. Capitol, Ste. 250, Washington, D.C. 20001-1572, (202) 624-5822.

Abstracts of Recent Studies

The following abstracts summarize the findings of three recent studies. The first two studies discussed below were funded in part by ATSDR.

Fingerhut MA, Halperin WE, Marlow DA, Piacitelli LA, Honchar PA, Sweeney MH, Greife AL, Dill PA, Steenland K, Suruda AJ. Cancer mortality in workers exposed to 2,3,7,8-tetrachlorodibenzo-p-dioxin. N Engl J Med 1991;324:212-8.

In both animal and epidemiologic studies, exposure to 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD or dioxin) has been associated with an increased risk of cancer. The present retrospective cohort study of mortality was conducted among 5172 workers at 12 plants in the United States that produced chemicals contaminated with TCDD. Mortality from several cancers previously associated with TCDD (stomach, liver, and nasal cancers, Hodgkin's disease, and non-Hodgkin's lymphoma) was not significantly elevated in this cohort. Mortality from soft-tissue sarcoma was increased, but not significantly. However, in a subcohort of 1520 workers with a year or more of exposure and 20 years or more of latency, mortality was significantly increased for soft-tissue sarcoma and for cancers of the respiratory system. Mortality from all cancers combined was slightly but significantly elevated in the overall cohort and was higher in the subcohort.

This study of occupational exposure to TCDD does not confirm the high relative risks reported for many cancers in

previous studies. Conclusions about increased risk of soft-tissue sarcoma are limited by small numbers and misclassification on death certificates. Excess mortality from all cancers combined, cancers of the respiratory tract, and soft-tissue sarcoma may result from TCDD exposure, but possible contributions of factors such as smoking and occupational exposure cannot be excluded.

Goldberg SJ, Lebowitz MD, Graver EJ, Hicks S. An association of human congenital cardiac malformations and drinking water contaminants. J Am Coll Cardiol 1990;16:155-64.

Results of an informal study in 1973 suggested that approximately one-third of the children found to have congenital heart disease lived in a small area in the city of Tucson, Arizona. In 1981, groundwater in the nearly identical area was found to be contaminated with trichloroethylene (and to a lesser extent with dichloroethylene and chromium).

In the present study, mothers exposed to the contaminated water area during the first trimester of pregnancy had live births with a significantly greater proportion (threefold as many) cases of congenital heart disease than did mothers with first-trimester exposure to the uncontaminated portion of the Tucson Valley. In addition, the rate of congenital heart disease was less for infants born to those parents who moved to the contaminated water area after the affected wells were closed. No other associated factor was identified, but one may have escaped detection. The data show a significant association but not a cause-and-effect relationship.

Dawson B, Johnson PD, Goldberg SJ, Ulreich JB. Cardiac teratogenesis of trichloroethylene and dichloroethylene in a mammalian model. J Am Coll Cardiol 1990;16:1304-9.

Previous studies have shown an increased incidence of major cardiac malformations in children born to mothers who lived in areas with water contaminated by halogenated hydrocarbons. Another study recently established trichloroethylene as a cardiac teratogen in an avian model. The present study was designed to determine whether trichloroethylene or dichloroethylene cause teratogenicity through direct intrauterine exposure of mammalian (rat) fetuses during the critical days of cardiac organogenesis.

The results demonstrate a dose-dependent relation between fetal exposure to these halogenated hydrocarbons and the appearance of a variety of congenital cardiac defects. Only a single noncardiac anomaly was found. Congenital heart anomalies were found in 3% of the control group but in 9% of the low-dose and 14% of the high-dose trichloroethylene groups and in 12.5% of the low-dose and 21% of the high-dose dichloroethylene groups. Dichloroethylene appears to be at least as great a cardiac teratogen as trichloroethylene even though it was administered at a tenfold lower concentration.

Calendar**April**

Apr. 14-19: 201st National American Chemical Society Meeting, Atlanta, GA. *Contact:* American Chemical Society, 1155 16th St., N.W., Washington, D.C. 20036, (202) 872-4600.

Apr. 25-May 7: Environmental Health: Strengthening Policies and Programs, Pecs, Hungary. *Contact:* Dr. Barry Levy, Program on Environment and Health, Management Sciences for Health, 165 Allandale Rd., Boston, MA 02130, (617) 527-9202.

Apr. 27-May 3: American Occupational Health Conference, San Francisco, CA. *Contact:* American College of Occupational Medicine, 55 W. Seegers Rd., Arlington Heights, IL 60005, (708) 228-6850.

Apr. 30-May 3: Surgeon General's Conference: Agricultural Safety and Health, Des Moines, IA. *Contact:* Centers for Disease Control, NIOSH, Mailstop D-37, 1600 Clifton Rd., N.E., Atlanta, GA 30333, (404) 639-2376.

May

May 12-15: American Lung Association/American Thoracic Society Annual Meeting, Anaheim, CA. *Contact:* American Lung Association, 1029 Vermont Ave., N.W., Suite 710, Washington, D.C. 20005, (202) 789-7400.

May 19-22: Rural Health: Harvesting Our Experience, Seattle, WA. *Contact:* National Rural Health Association, 301 E. Armour Blvd., Suite 420, Kansas City, MO 64111, (816) 756-3140.

May 23-27: Communication and Health, Chicago, IL. *Contact:* International Communication Association, P.O. Box 9589, Austin, TX 78766, (512) 454-8299.

May 26-31: U.S. Public Health Service Professional Association Meeting, Atlanta, GA. *Contact:* John Steward, Centers for Disease Control, 1600 Clifton Rd., Mailstop F-46, Atlanta, GA 30333, (404) 488-4600.

June

Jun. 5-7: National Committee on Vital and Health Statistics (Full Committee), Washington, D.C. *Contact:* Nancy Hamilton, National Center for Health Statistics, 6525 Belcrest Rd., Room 1100, Hyattsville, MD 20782, (301) 436-7122.

Jun. 14-15: Preventing Chemical Use and Dependency Among Latina Women, Hartford, CT. *Contact:* Kendahl Craig, The Hispanic Health Council, 96 Cedar St., Hartford, CT 06106, (203) 527-0856.

Jun. 14-19: Outdoor, Indoor, and Workplace Air Pollution, Northern Moravia, Czechoslovakia. *Contact:* Dr. Barry Levy, Program on Environment and Health, Management Sciences for Health, 165 Allandale Rd., Boston, MA 02130, (617) 527-9202.

Jun. 22-27: Emerging Environmental Health Issues: An International Concern, Portland, OR. *Contact:* National Environmental Health Association, 720 S. Colorado Blvd., Suite 970, South Tower, Denver, CO 80222, (303) 756-9090.

July

Jul. 10-12: National Association of County Health Officials Annual Conference, Snowbird, UT. *Contact:* Jennifer Morrone, NACHO, 440 First St., N.W., Suite 500, Washington, D.C. 20001, (202) 783-5550.

Jul. 15-17: 1991 Public Health Conference on Records and Statistics, Washington, D.C. *Contact:* Nancy Hamilton, National Center for Health Statistics, 6525 Belcrest Rd., Room 110, Hyattsville, MD 20782, (301) 436-7122.

September

Sep. 3-6: National Institute for Occupational Safety and Health National Conference, Cincinnati, OH. *Contact:* Tim Groza, Centers for Disease Control, NIOSH, D-37, 1600 Clifton Rd., N.E., Atlanta, GA 30333, (404) 639-2376.

Sep. 10-13: North Carolina Public Health Association Annual Meeting, Fayetteville, NC. *Contact:* Lacy Williams, E. Newton Smith Public Health Center, 227 Fountainhead Lane, Fayetteville, NC 28301, (919) 433-3660.

Sep. 25-28: Fourth International Congress on Environmental Lung Disease, Montreal, Quebec, Canada. *Contact:* American College of Chest Physicians, 3300 Dundee Rd., Northbrook, IL 60062, (708) 698-2200.

October

Oct. 7-8: Preventing Childhood Lead Poisoning, Washington, D.C. *Contact:* Dr. Janet Phoenix, Alliance To End Childhood Lead Poisoning, 600 Pennsylvania Ave., S.E., Suite 100, Washington, D.C. 20003, (202) 543-1147.

November

Nov. 4-8: 57th Annual Scientific Assembly, San Francisco, CA. *Contact:* American College of Chest Physicians, 3300 Dundee Rd., Northbrook, IL 60062, (708) 698-2200.

Nov. 10-14: Public Health and a National Health Program, Atlanta, GA. *Contact:* American Public Health Association, 1015 15th St., N.W., Washington, D.C. 20005, (202) 789-5600.

Nov. 17-22: Measuring, Understanding, and Predicting Exposures in the 21st Century, Atlanta, GA. Contact: Dr. Gerry Akland (MD-75), Technical Program Chairman, U.S. Environmental Protection Agency, Research Triangle Park, NC 27711, (919) 541-4477.

Please submit calendar information to: *Hazardous Substances and Public Health*, Agency for Toxic Substances and Disease Registry, 1600 Clifton Rd., Mailstop E-33, Atlanta, GA 30333; phone (404) 639-0736; fax (404) 639-0746.

Announcements

Errata: Vol. 1, No. 1

In the November 1990 issue of *Hazardous Substances and Public Health*, an article entitled "Southern medical schools to promote environmental health," p. 8, listed the University of Kentucky at Louisville as one of five schools participating in the Educating Physicians in Occupational Health and the Environment (EPOCH-Envi) project. The participating school is the University of Kentucky in Lexington. *Hazardous Substances and Public Health* regrets the error.

An article entitled "The year 2000 objectives for environmental health," p. 8, failed to report how readers may order the Department of Health and Human Services (DHHS) publication *Healthy People 2000: National Health Promotion and Disease Prevention Objectives*. The report is available from the Government Printing Office. Phone (202) 783-3238, and request stock number 017-001-00474-0. The full report is \$31; a summary report (stock number 017-001-00473-0) is available for \$9.

Asthma Workshop Findings

Forty-six participants in the American College of Chest Physicians' Workshop on Environmental and Occupational Asthma contributed to a joint federal initiative for the development and dissemination of a national occupational and environmental asthma education and prevention program. Workshop reports and recommendations, together with papers presented, are published in *Chest*, Vol. 98, No. 5, November 1990 Supplement. Limited copies of this edition of *Chest* are available from Max R. Lum, Ed.D., M.P.A., Director, Division of Health Education, ATSDR, 1600 Clifton Rd., Mailstop E-33, Atlanta, GA 30333, (404) 639-0730.

NTIS Best Seller

The National Technical Information Service (NTIS) reports that the ATSDR publication *Public Health Implications for Medical Waste: A Report to Congress* sold more than 297 copies between October 1990 and February 1991. This places the *Medical Waste Report* on NTIS' best seller list (sales of 100 or more copies a year). To order the report, call or write NTIS, Port Royal Road, Springfield, VA 22161, (703) 487-4650, and request document number PB 91-100271. The cost of the report is \$33 plus shipping and handling.

Eastern Europe Information Available

Management Sciences for Health (MSH) has begun publishing a bimonthly newsletter called "Environment and Health in Central and Eastern Europe." MSH is a private, nonprofit organization established in 1971 to help health and population programs increase their effectiveness by incorporating concepts and techniques of modern management. The newsletter will serve as a source of information on environmental and occupational health as these issues relate to the nations of central and eastern Europe. To receive the newsletter, which is offered free of charge, write Management Sciences for Health, 165 Allandale Rd., Boston, MA 02130, phone (617) 527-9202, fax (617) 965-2208.

MSH also has available the proceedings of "Occupational and Environmental Health during Societal Transition in Eastern Europe," a symposium held in Pecs, Hungary, in June 1990. The 184-page publication includes condensed versions of 20 presentations on the status of environmental and occupational health in central and eastern Europe, the reports of 21 working groups on policy issues related to occupational and environmental health, a listing of 78 symposium participants, and information on relevant U.S. government agencies. The cost of the proceedings is \$20 plus shipping and handling (\$4 in the United States; \$8 outside the United States). For more information on symposium proceedings, please contact: Barry S. Levy, M.D., M.P.H., Director, Program on Environment and Health, Management Sciences for Health, 165 Allandale Rd., Boston, MA 02130, phone (617) 527-9202, fax (617) 965-2208.

Household Hazardous Waste Project

Missouri's Household Hazardous Waste Project (HHWP) is a community education program that assists the consuming public in making informed decisions about the safe use, storage, and disposal of hazardous products commonly found around the home. Materials created by HHWP include a 178-page handbook *Guide to Hazardous Products Around the Home*, *Fact Sheets* on consumer tips, pesticides and safety equipment, a *Hazardous Waste In Our Homes?* videotape, and educational activities for classrooms, clubs, civic and youth groups. Begun in 1987 as a grassroots program to educate citizens in a single county, HHWP is a program of the Environmental Improvement and Energy Resources Authority, an agency of the Missouri Department of Natural Resources. The project is administered by

Southwest Missouri State University's Office of Continuing Education. For more information, please contact Sondra Goodman, Household Hazardous Waste Project, Southwest Missouri State University, 901 S. National, Box 108, Springfield, MO 65804, (417) 836-5777.

Johns Hopkins Summer Institute

The Department of Environmental Health Sciences at Johns Hopkins University in Baltimore, Maryland, is hosting the Fourth Summer Institute in Environmental Health Studies, June 3-14, 1991. The seven courses offered for academic credit or continuing education credit are Principles of Toxicology, Risk Communication of Environmental Hazards, Fundamentals of Occupational Health, Physical Agents in Environmental Health Sciences, Contemporary Problems in Radiation Health Sciences, Risk Assessment and Risk Management, and Principles of Industrial Hygiene. The Summer Institute is designed for graduate students, practicing health professionals (i.e., physicians, nurses, industrial hygienists, toxicologists, safety engineers), people responsible for health, safety, and environmental matters in either government service or the private sector, and public health practitioners. For more information, please contact Dr. Jacqueline K. Corn, The Johns Hopkins University, School of Hygiene and Public Health, 615 N. Wolfe St., rm. 6001, Baltimore, MD 21205, (301) 955-2609.

Please submit announcements to: *Hazardous Substances and Public Health*, Agency for Toxic Substances and Disease Registry, 1600 Clifton Rd., Mailstop E-33, Atlanta, GA 30333, phone (404) 639-0736, fax (404) 639-0746.

ATSDR's 24-hour Emergency Response Line (404) 639-0615

ATSDR's Emergency Response and Consultation Branch, Division of Health Assessment and Consultation, provides assistance on health issues surrounding the release or threat of release of hazardous materials.

The following experts are available for consultation and advice:

- o within 10 minutes, an emergency response coordinator;
- o within 20 minutes, a preliminary assessment team consisting of a toxicologist, chemist, environmental health scientist, physician and other health personnel as required;
- o within 8 hours (if incident necessitates), an on-site response team.